Supplementary information

Random D1-A1-D1-A2 Terpolymers Based on Diketopyrrolopyrrole and Benzothiadiazolequinoxaline (BTQx) Derivatives for High-Performance Polymer Solar Cells

M.L. Keshtov[a], S.A. Kuklin[a], I.O. Konstantinov[a], I. E. Ostapov[ab], E.E. Makhaeva[b], A.Y. Nikolaev[a], Zh. Xie[c], Y. Zou[d] and Ganesh D. Sharma[e*]*

[a]Institute of Organoelement Compounds of the Russian Academy of Sciences, Vavilova St., 28, 119991 Moscow, Russian Federation

[b]Department of Physics of Polymers and Crystals, Faculty of Physics, M.V. Lomonosov Moscow State University, Leninskie Gory 1, 119991, Moscow, Russia

[c]Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

[d]College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China

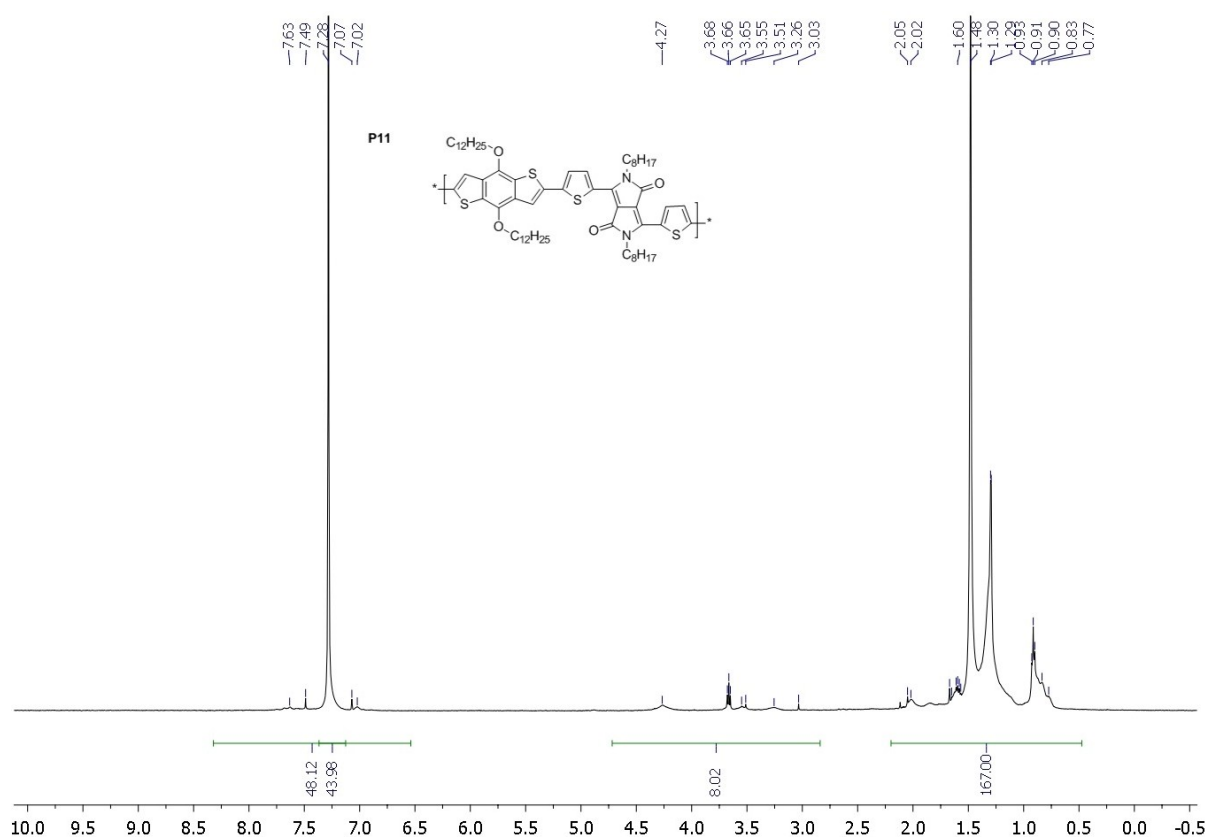*[e]Department of Physics, The LNM Institute for Information Technology, Jamdoli, Jaipur*

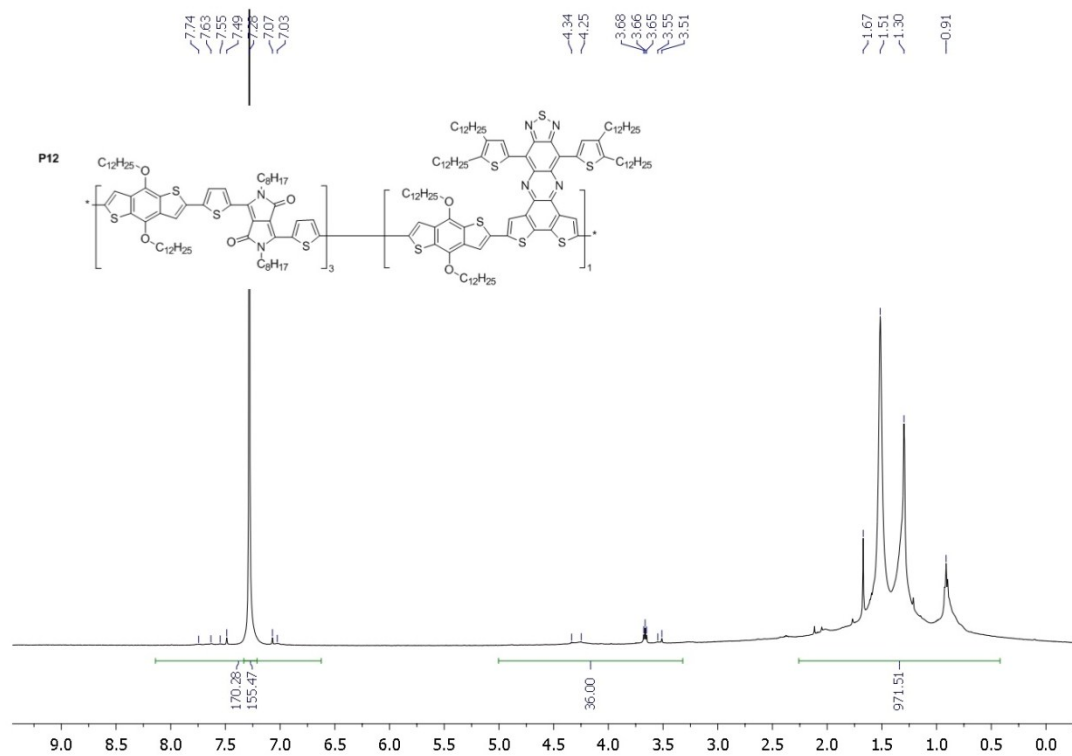Figure S1 ^{1}H NMR spectrum of random polymer **P11** in CDCl$_3$

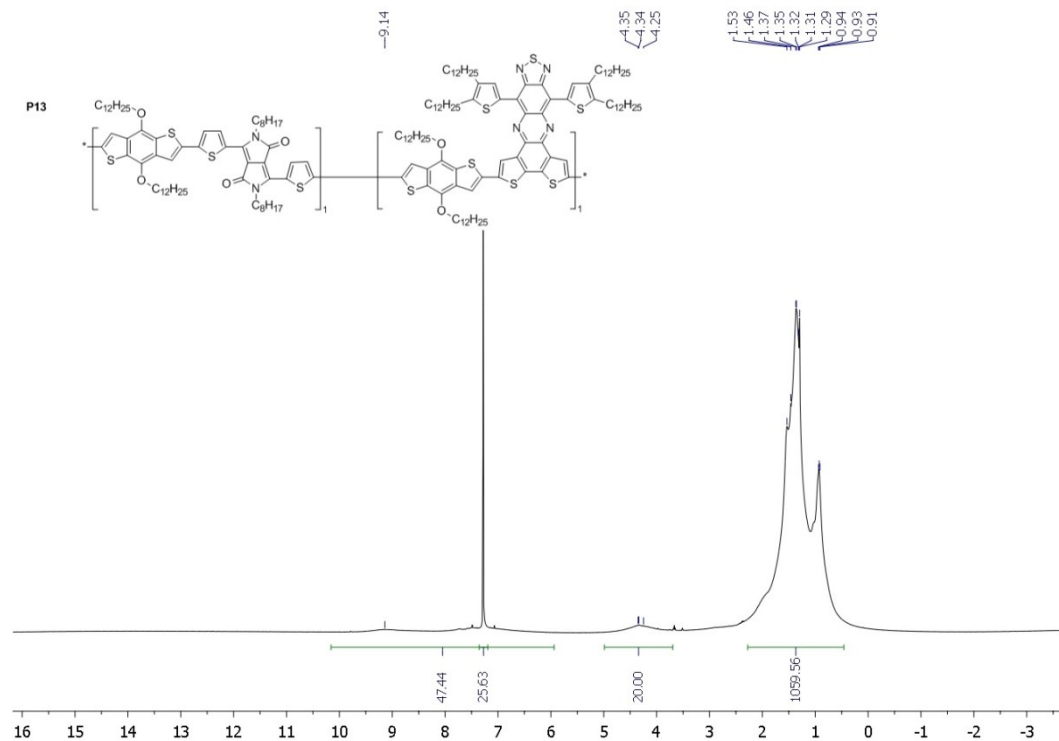Figure S2 ^{1}H NMR spectrum of random polymer **P12** in CDCl$_3$

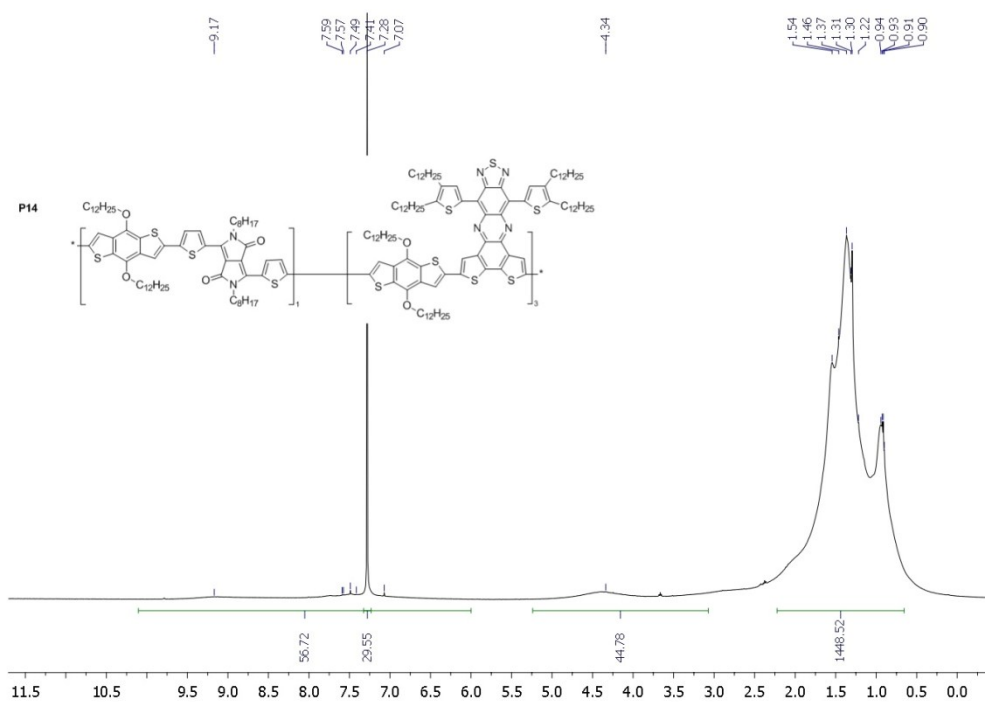Figure S3 ^{1}H NMR spectrum of random polymer **P13** in CDCl$_3$

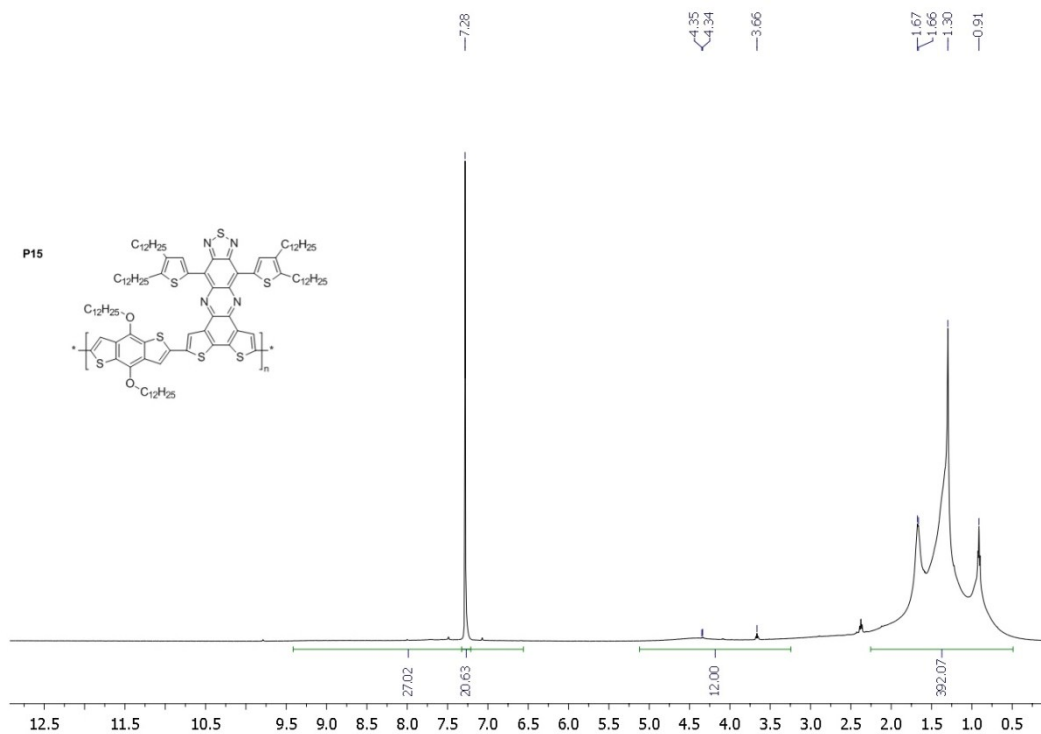Figure S4 ^{1}H NMR spectrum of random polymer **P14** in CDCl$_3$

Figure S5 ^{1}H NMR spectrum of random polymer **P15** in CDCl$_3$